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A ten point checklist for getting it off the shelf

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TECHNOLOGY TRANSITION



A TEN POINT CHECKLIST FOR GETTING IT OFF THE SHELF

Far too many R&D programs (in industry as well as government) result in reports or prototypes that represent fundamentally good ideas but end up gathering dust on a shelf.



TECHNOLOGY TRANSITION



- 1. OWN A DISCRIMINATING TECHNOLOGY**
- 2. WALK A MILE IN A WARRIOR'S BOOTS**
- 3. HAVE A PLAN BUT DON'T STICK TO IT**
- 4. MAKE A COMMITMENT**
- 5. LEAD YOUR CONTRACTORS**
- 6. BUILD A CONSTITUENCY**
- 7. WORK THE ACQUISITION SYSTEM**
- 8. LOOK FOR WINDOWS OF OPPORTUNITY**
- 9. BE CONSCIOUS OF DOLLARS AND SENSE**
- 10. DON'T FORGET THE LITTLE THINGS**



TECHNOLOGY TRANSITION



1. OWN A DISCRIMINATING TECHNOLOGY

- Know the technology being developed and be able to articulate how it discriminates from other similar approaches. Uniqueness is essential.
- Understand the commercial utility of the technology. Ownership of the technology, coupled with greed, can be used as a strong positive or negative motivator.
- Avoid comparing your unique technology goals to what is possible now. You must compare it to where the competition will be when your technology reaches maturity; and it still needs to be unique.



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2. WALK A MILE IN A WARRIOR'S BOOTS

- Put on boots and jeans and go on a field exercise, ride on a ship, fly in a fighter.
- Ask tons of questions. Listen a lot. Military people are professionals and take great pride in what they do. They are more than willing to tell you what they do, how they do it and offer ideas on how it could be done better.
- Be critically aware of the physical environment.
- Get personal. Put a picture of Sgt Gomez on your desk and caption it with "This is the person I'm trying to help".
- Learn about military doctrine, strategy and tactics. Understand how your technical goals contribute to the larger picture. Figure out what's important and what's not and how you are going to make a difference.



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3. HAVE A PLAN BUT DON'T STICK TO IT.

- Translate your technical goals and objectives into operational benefits.
- Draw a notional path that shows how your technology will end up in some kind of a military product. Almost all technology development programs demonstrate end results in some fashion. Tailor these demonstrations to be something that is useful to a particular military customer.
- Make "value added to the user" a key parameter for periodic evaluation of progress.
- Constantly evaluate your plan against your goals and objectives and be prepared to change everything.
- Create chaos, then stabilize. Create chaos, then stabilize. Create chaos,



TECHNOLOGY TRANSITION



4. MAKE A COMMITMENT

- Explain to the warriors what you plan to do for them. If they like the idea, make a commitment and set a time when you will come back and demonstrate something.
- Make them part of your development team. Invite them to program reviews and PI meetings.
- Listen to "most" of what they tell you.
- Don't get their hopes up and then disappear.



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5. LEAD YOUR CONTRACTORS

- Inspire your contractors by immersing them in the military environment and leveraging their patriotism.
- Make sure they know that you are not the customer and that you will be checking with the customer to see how they are doing.
- Get them to the field frequently to demonstrate capability and show progress.
- Don't pay too much attention to the exact wording of your contract. Things change rapidly in R&D. Do what is right and change the contract as often as necessary.
- It's ok to fail. Build concept/design iterations into the process. Review frequently. Learn from mistakes. Change course as often as necessary. Let contractors know that you love them - it's what they are doing that needs to be fixed.



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6. BUILD A CONSTITUENCY

- Wire all your technical groups together and make them work as a team. Get them to meet frequently to discuss plans, progress, payoffs.
- Create dependencies (checks and balances).
- Form joint service working groups consisting of military technologists and approaches, get feedback, learn what others are doing, obtain ideas about new technology insertion possibilities. They serve as apostles within their Service.
- Pick agents carefully and then empower them.
- You can't do it alone. The process sometimes requires heroics. Try to make heroes out of as many of these people as possible. Don't be the only hero.



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7. WORK THE ACQUISITION SYSTEM

- Get the organization charts for a military department. Trace a red line through all the organizational groups through which money flows. Ignore everything not on the red line.
- Brief as many of these as time permits. Tell them about your goals and objectives, potential military benefits, interactions with operational units and appropriate feedback, and plans for the future.
- Tell them what you want. 1. Permission to continue to operate with their people in the field. 2. Help in performing test and evaluation for operation use (flight tests, etc.). 3. Help in establishing a service or joint service requirement. 4. Action in creating a POM issue.
- This is a very difficult process in a time of fiscal constraint. Be persistent.



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8. LOOK FOR WINDOWS OF OPPORTUNITY

- Keep abreast of new start programs in the military and determine how your technology can add value to what is already being planned.
- Find out when on-going systems plan to have block upgrades or make product improvements. Work your technology toward these dates so that the PMs have an alternative technology choice.
- Other opportunities are for improvements to systems that exhibit performance problems because of their age (reliability) or because the technology has failed to keep up with changing requirements.
- Opportunities can be identified by walking a mile in a warrior's boots, from your constituency, and interacting with the acquisition system.



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9. BE CONSCIOUS OF DOLLARS AND SENSE

- Focus on the price (vs the cost) to the end customer of your technology.
- Understand how your technology (product) affects the price of the system it will operate in or with.
- Always quantify the term “affordability”. What the military can afford is more a matter of priorities than price. The price the military is willing to pay or able to afford is dependent upon how much value is provided.
- Focus on price for value-added. Make quantitative tradeoffs where possible. Value-added is largely subjective but military operators can help define what value makes sense in their domain.



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10. DON'T FORGET THE LITTLE THINGS

- Be constantly aware of the all the people involved.
 - Secretaries
 - Technicians
 - Grad students
 - Contracting officers
 - Etc.
- Personally touch all of them and commend their performance to their bosses.
- Be sincere
- Be honest
- Uphold the highest morale standards.
- Set an example



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